

The Healthcare Cost and Utilization Project (HCUP)

Tools and Products to Support Health Services Research and Policy Analysis

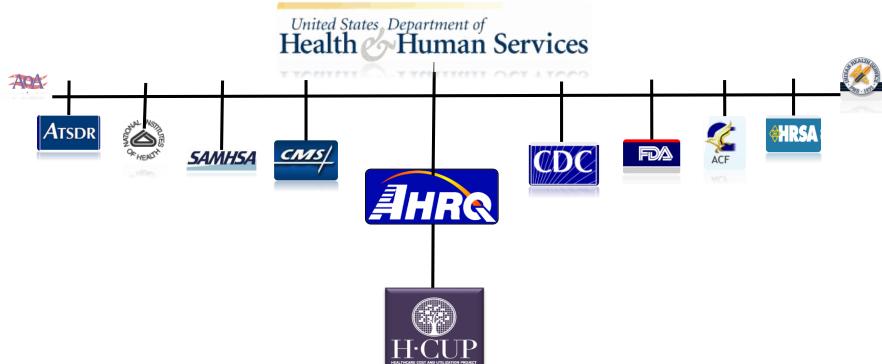
Agency for Healthcare Research and Quality Webinar ♦ April 13, 2016



What is the Agency for Healthcare **AHR** Research and Quality (AHRQ)?



The Agency for Healthcare Research and Quality (AHRQ) is a federal agency under the Department of Health and Human Services.





AHRO Webinar Overview



- Brief Database Review
- Tools & Software
- Supplemental Files
- HCUPnet Overview
- HCUP Fast Stats
- Publications and Publication Search
- How to Access HCUP Resources



Healthcare Cost and Utilization Project (HCUP)



THE LARGEST COLLECTION OF MULTI-YEAR, ALL-PAYER, ENCOUNTER-LEVEL:

INPATIENT
EMERGENCY DEPARTMENT
AMBULATORY SURGERY

HOSPITAL-BASED ADMINISTRATIVE DATA



AHR What is HCUP?



HCUP is a comprehensive set of publicly available all-payer health care data

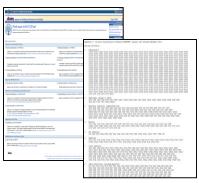


Includes multi-year inpatient and outpatient data, based on the hospital billing record

HCUP Databases



Research Tools



Research Publications



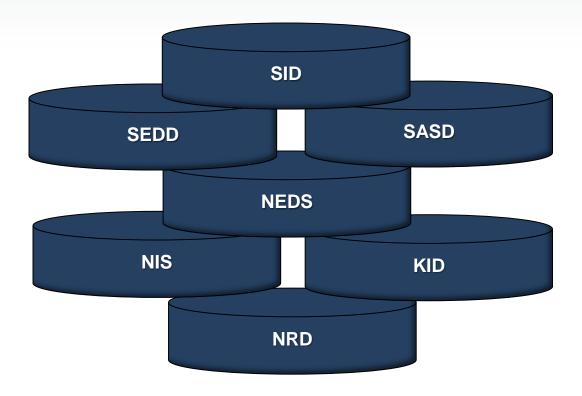
User Support





The Core of HCUP: Hospital-Based IP, ED, AS Databases





Inpatient, Emergency Department, and Ambulatory Surgery and Services Databases Based on Hospital Billing Data



HCUP has Seven Types of Databases



Three State-Specific Databases



State
Inpatient
Databases
(SID)



State
Ambulatory
Surgery &
Services
Databases



State
Emergency
Department
Databases
(SEDD)

(SASD)

Four National (Nationwide) Databases



National Inpatient Sample (NIS)



Nationwide Emergency Department Sample

(NEDS)



Kids'
Inpatient
Database
(KID)



Nationwide Readmissions Database

(NRD)



HCUP State-Specific Databases



State Inpatient Databases

(SID)

All inpatient hospital discharge data (including those admissions that started in the ED) from participating HCUP States

State Ambulatory
Surgery & Services
Databases

(SASD)

Ambulatory surgery data (ambulatory surgery and other services from hospital-owned and sometimes nonhospital-owned facilities) from participating HCUP States

State Emergency
Department Databases

(SEDD)

Emergency department data (treat and release) from participating HCUP States



HCUP National (Nationwide) Databases



National (Nationwide)
Inpatient Sample

(NIS)

Inpatient discharge data for a sample of discharges from all hospitals in SID

Kids' Inpatient Database

(KID)

Pediatric inpatient hospital discharge data from a sample of pediatric discharges in SID

Nationwide Emergency Department Sample

(NEDS)

Emergency department data (treat and release & admitted) from a **sample of hospitals** in SID and SEDD

Nationwide Readmissions Database

(NRD)

Inpatient discharge data from all hospitals for SID with verified patient linkage numbers



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Most HCUP Tools Can be **Applied to Any Administrative Database**



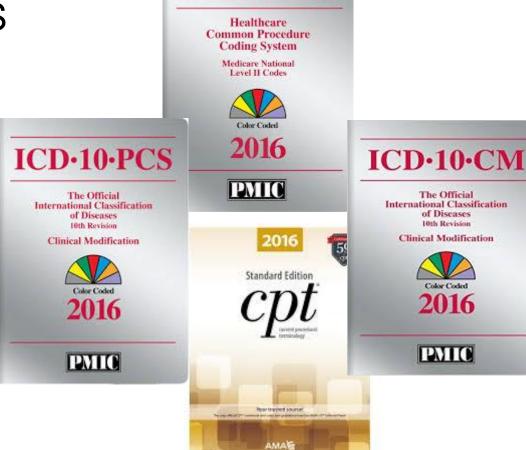
- Clinical Classifications Software
- **Procedure Classes**
- **Chronic Condition Indicator**
- Comorbidity Software
- **Utilization Flags**
- Surgery Flags
- **AHRQ Quality Indicators**
 - **Prevention Quality Indicators**
 - Inpatient Quality Indicators
 - **Patient Safety Indicators**
 - **Pediatric Indicators**



Most Tools Based on Medical Coding Classifications



- ICD-9-CM
- ICD-10-CM/PCS
- CPT
- HCPCS
- DRGs
- MDC



H·C·P·C·S



AHR Multiple Coding Systems



- ICD-9-CM
- ICD-10-CM/PCS
- **CPT**
- **HCPCS**

Individual Codes

Groupers

Which coding system is appropriate for your analysis?





ICD-9-CM

International Classification of Diseases 9th Revision Clinical Modification Sixth Edition

DALO

- ICD-9-CM Procedure Codes
- ICD-9-CM Diagnosis Codes

Included in both inpatient and outpatient databases





ICD-10-CM

Diagnosis coding under this system uses 3–7 alpha and numeric digits and full code titles

ICD-10-PCS

Procedure coding system uses 7 alpha or numeric digits

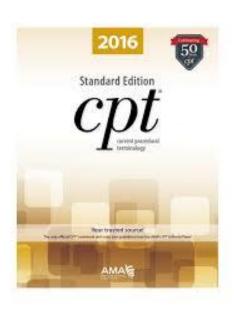


Common Procedural Coding System – CPT & HCPCS



- 1. CPT
- 2. HCPCS
- 3. Local Codes

Levels 1 & 2 are included in outpatient (SEDD and SASD) databases





Diagnosis Related Groups (DRGs)



Groups ICD-9-CM and ICD-10-CM Codes into Clinical/Resource Categories using principal diagnosis, secondary diagnoses, surgical procedures, age, gender, and discharge status of the patients treated

DRG Grouper Hospital Input **Software Administrative DRG Codes Variables Database** ICD-9-CM Diagnoses and DRG x **Procedures** ICD-10-CM NIS DRG x **Diagnoses** ICD-10-PCS **KID** DRG x **Procedures** Age SID DRG x Gender **Discharge** NRD **Status** 17



Major Diagnostic Category (MDC)























Over 15,000 ICD-9-CM Codes









Approximately 500 DRGs





25 MDCs



Clinical Classifications AHR Software (CCS)



- Clusters diagnosis and procedure codes into categories
 - >14,000 diagnoses codes \rightarrow 285 categories
 - > 4,000 procedure codes \rightarrow 231 categories
- Useful for presenting descriptive statistics, understanding patterns



ICD-9-CM Codes

0031 0202 0223 0362 0380 0381 03810 03811 03819 0382 0383 03840 03841 03842 03843 03844 03849 0388 0389 0545 449 7907

0700 0701 0702 07020 07021 07022 07023 0703 07030 07031 07032 07033 0704 07041 07042 07043 07044 07049

CCS **Categories**

CCS 2: Septicemia

CCS 6: Hepatitis





- ICD-9-CM diagnoses and procedures
 - Single-level
 - Multi-level
- ICD-10-CM diagnoses and ICD-10-PCS procedures
 - Single-level
- ICD-10 for mortality
- Services and Procedures
 - Common Procedural Terminology (AMA)



What Codes Are Used in HCUP Data Files?



DETAILED CODES

ICD-9-CM

- Diagnoses Codes
- Procedure Codes

CPT

HCPCS

GROUPED CODES

DRG MDC CCS

Inpatient Databases

ICD-9-CM

DRG

MDC

CCS

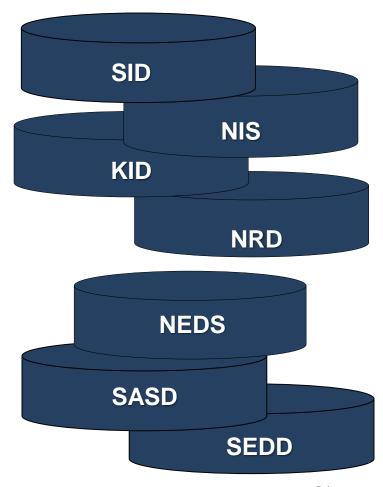
Outpatient Databases

ICD-9-CM

CPT

HCPCS

CCS

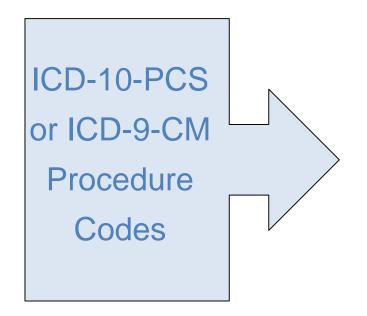




AHR Procedure Classes



- Groups procedure codes into one of four categories
 - ► ICD-10-PCS
 - ► ICD-9-CM procedure codes
- Major procedures defined as OR procedures (DRGs)



1. Minor Diagnostic

Ex: Electrocardiogram

2. Minor Therapeutic

Ex: Pacemaker

3. Major Diagnostic

Ex: Pericardial Biopsy

4. Major Therapeutic

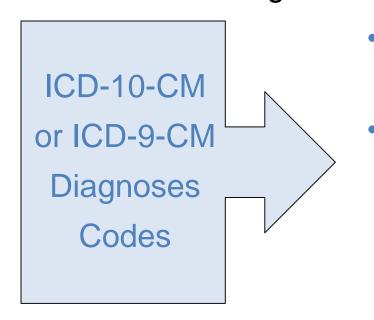
Ex: CABG



Chronic Condition Indicator (CCI)



- Groups diagnosis codes into Chronic or Non-Chronic Categories
 - ICD-10-CM diagnoses codes
 - ICD-9-CM diagnoses codes



Chronic

Ex: Diabetes

Non-Chronic

Ex: Food Poisoning



AHR Comorbidity Software



- Creates and appends indicator flags to each record for 29 major comorbidities
 - ▶ ICD-10-CM diagnoses codes
 - ICD-9-CM diagnoses codes

ICD-10-CM or ICD-9-CM Codes, DRGs on Administrative Data Comorbidity Software





29 Comorbidity Groups

Valvular disease
Pulm circ disorders
Peripheral vascular dx
Hypertension
Paralysis
Other neuro disorders
Chronic pulmonary dx
DM w/o complications
DM w/ complications
Hypothyroidism
Renal failure
Liver disease ...



AHR Utilization Flags



- Reveals additional information about the use of health care services
- Primarily uses UB-04 revenue codes, augmented with ICD-9-CM procedure codes

Utilization Flag Software





UB-04 codes

ICD-9-CM

codes

Emergency Room

Observation Services/ CT Scan

 Intensive Care Unit



AHR 30 Utilization Flags



Utilization Flags	
Accommodation	
Intensive Care Unit (ICU)	Coronary Care Unit (CCU)
Newborn Level II	Newborn Level III
Newborn Level IV	
Cardiac Services	
Cardiac Catheterization Lab	Cardiac Stress Test
Echocardiogram	Electrocardiogram (EKG)
Imaging and Diagnostic Tests	
Computed Tomography (CT) Scan	Chest X-Ray
Electroencephalogram (EEG)	Ultrasound
Magnetic Resonance Technology (MRT)	Nuclear Medicine
Devices	
Pacemaker	Other Implants
Therapeutic Services	
Lithotripsy	Occupational Therapy
Physical Therapy	Respiratory Therapy
Therapeutic Radiology and Chemotherapy	Renal Dialysis
Speech-Language Pathology	Erythropoietin (EPO)
Mental Health and Substance Abuse	Blood

There are not **ICD-9-CM codes** for all services. **Concern exists** that some diagnostic procedures may be underreported.



AHR Surgery Flags



 Identifies encounters for surgical procedures in ICD-9-CM or CPT-based inpatient and ambulatory surgery data

1. Narrow

- Invasive therapeutic surgical procedure involving incision, excision, manipulation, or suturing of tissue that penetrates or breaks the skin
 - Typically requires use of an operating room
- Requires regional anesthesia, general anesthesia, or sedation to control pain

2. Broad

 Includes all narrowly defined surgical procedures as well as a broader group of diagnostic and less invasive therapeutic surgeries

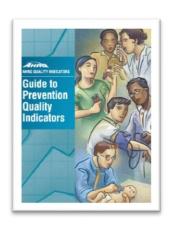
or CPT



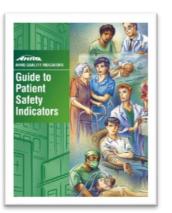
AHRQ Quality Indicators

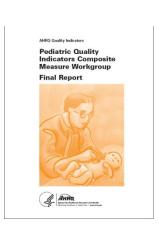


- Creates measures of health care quality using inpatient administrative data
 - 4 Quality Indicators
 - 1. Prevention Quality Indicators
 - 2. Inpatient Quality Indicators
 - 3. Patient Safety Indicators
 - 4. Pediatric Indicators







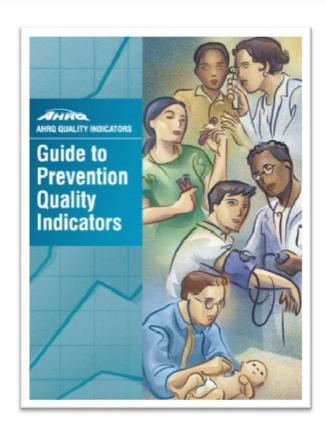




Prevention Quality Indicators (PQIs)



- Identify hospital admissions that are potentially preventable through high-quality outpatient care.
- Examples of PQI Measures:
 - Diabetes Short-term Complication Admission Rate
 - Diabetes Long-term Complication Admission Rate
 - Pediatric Asthma Admission Rate
 - Pediatric Gastroenteritis Admission Rate
 - Hypertension Admission Rate

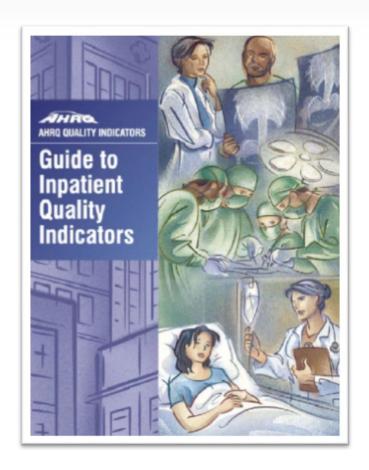




Inpatient Quality Indicators (IQI)



- Reflect quality of care inside hospitals:
 - Inpatient mortality for medical conditions and surgical procedures
 - Utilization of procedures
 - Volume of procedures
- Examples of IQI Measures:
 - Esophageal Resection Volume
 - Pneumonia Mortality Rate
 - Coronary Artery Bypass Graft Mortality Rate
 - Cesarean Section Delivery Rate

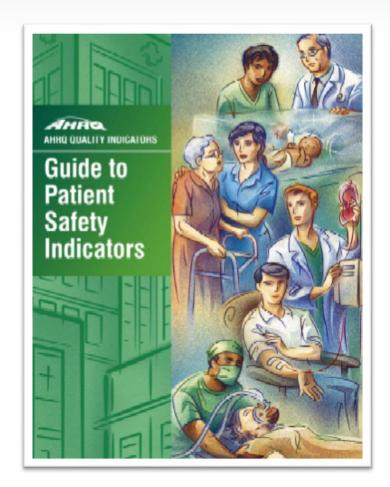




Patient Safety Indicators (PSI)



- Identify potentially avoidable complications and iatrogenic events.
- Examples of PSI Measures:
 - Complications of Anesthesia
 - Death in Low-Mortality DRGs
 - Decubitus Ulcer
 - Failure to Rescue
 - Foreign Body Left During Procedure
 - Iatrogenic Pneumothorax

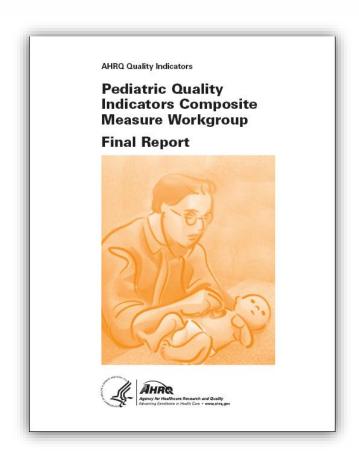




Pediatric Quality Indicators (PDI)



- Identify potentially avoidable hospitalizations among children.
- Examples of PDI Measures:
 - Accidental Puncture or Laceration
 - Decubitus Ulcer
 - Neonatal mortality
 - Pediatric Heart Surgery Mortality
 - Postoperative Hemorrhage or Hematoma







Prevention Quality Indicators identify hospital admissions in geographic areas that evidence suggests may have been avoided through access to high-quality outpatient care.... >> More Info

Prevention Quality Indicators

>> More Info

Inpatient Quality Indicators

>> More Info

Patient Safety Indicators

>> More Info

Pediatric Quality Indicators

>> More Info

Introduction

The Agency for Healthcare Research and Quality (AHRQ) has developed an array of health care decision making and research tools that can be used by program managers, researchers, and others at the Federal, State and local levels. The Quality Indicators (QIs) are measures of health care quality that make use of readily available hospital inpatient administrative data. The current AHRQ QI™ modules expand HCUP Qls. The Qls can be used to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time.

The current AHRQ QI modules represent various aspects of quality: Prevention Quality Indicators, Inpatient Quality Indicators, Patient Safety Indicators, and Pediatric Quality

Email Sign up

Register to receive email of AHRQ announcements and the availability of new quality indicators:

Sign Up: Quality Indicators email updates

News & Announcements

- February 18, 2016 Software Updates to SAS 5.0 and WinQI 5.0-New!
- . February 18, 2016 Request for expert nominations to a Standing Work Group (SWG) for the AHRQ Quality Indicators (QIs) -Updated! Deadline extended to February 26,2016 for Standing Work Group nominations



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HCUP Supplemental Files Can Only HARR be Applied to HCUP Databases



- **Cost-to-Charge Ratio Files**
- **Hospital Market Structure Files**
- Supplemental Variables for Revisit Analyses
- Trend Weights Files (NIS & KID)
- NIS Hospital Ownership File
- AHA Linkage Files





Cost-to-Charge Ratio (CCR) Files



 Enable conversion of charge data to cost data on the NIS, KID, NRD, and SID



Hospital-Level Data



Apply Ratios

APICC

XXXX

XXXX

XXXX

XXXX

XXXX

XXXX

GAPICC

XXXX

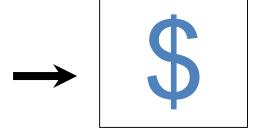
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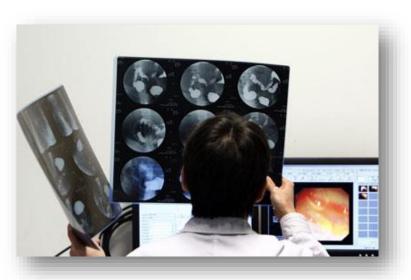
Convert Total
Charges to Costs



Hospital Market Structure (HMS) Files



- Contain various measures of hospital market competition
- Allow users to broadly characterize the intensity of competition that hospitals face
 - Using various definitions of market area





- Allows linkage across settings and time
 - Hospital readmissions
 - ED visits following hospital discharge
 - Inpatient hospitalizations following ambulatory surgery visits
- Adheres to strict privacy guidelines



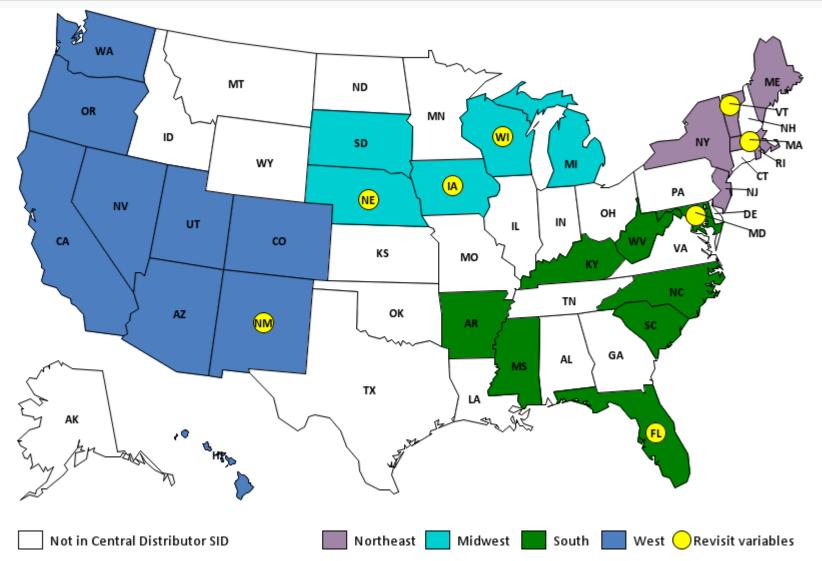
HCUP Supplemental Variables for Revisit Analyses HCUP Supplemental Variables

- There are two HCUP supplemental variables:
 - Synthetic person-level identifiers
 - Verified against the patient's date of birth and gender
 - Examined for completeness (VisitLink)
 - Timing variable determines the number of days between events for an individual (DaysToEvent)
 - Without the use of actual dates
- HCUP revisit variables can be used only with the SID, SASD, and SEDD (<u>not</u> nationwide databases) for States with encrypted patient identifiers
- National revisit statistics are available on HCUPnet



2014 SID States with Revisit Variables

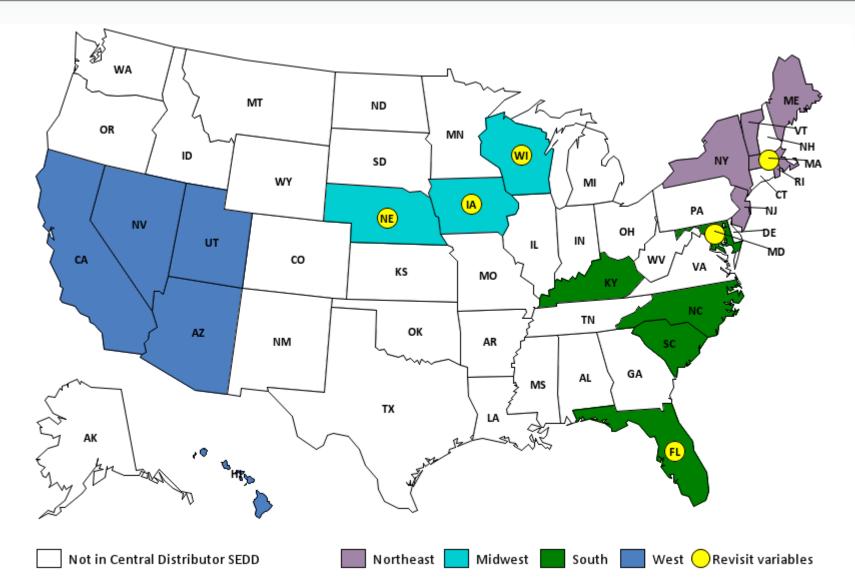






2014 SEDD States with Revisit Variables

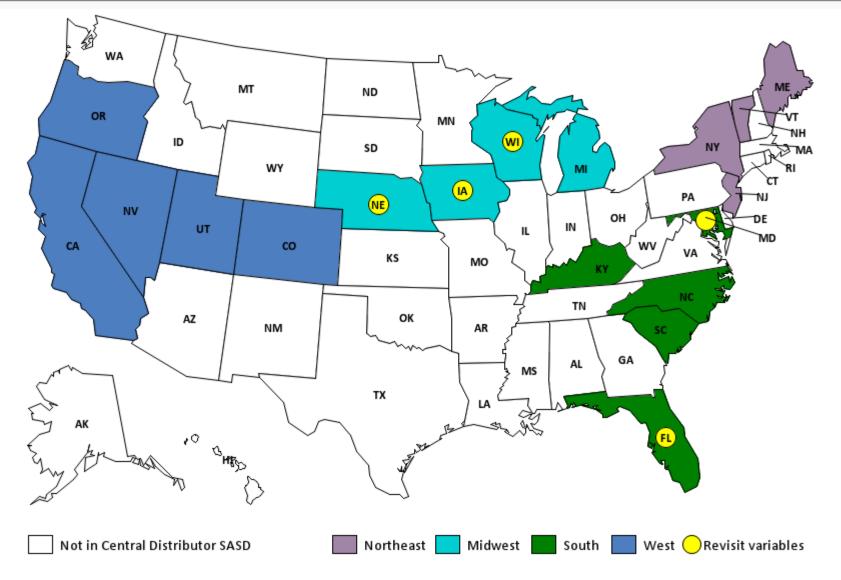






2014 SASD States with Revisit Variables







Additional HCUP Supplemental Files



Trend Weights Files (NIS & KID)

 Discharge-level files that provide trend weights and data elements that are consistently defined across data years

NIS Hospital Ownership File

 Hospital-level files facilitate analysis of the NIS by hospital ownership categories

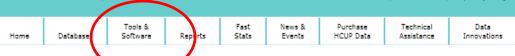
AHA Linkage Files

Enable researchers to link hospital identifiers in some
 State databases to the AHA Annual Survey Databases

http://www.hcup-us.ahrq.gov/tools_software.jsp



Tools & Software



Favorites

HCUPnet

HCUPnet is an interactive tool for identifying, tracking, analyzing, and comparing statistics on hospital and emergency care. HCUPnet provides statistics from the HCUP Nationwide Databases (NIS, KID, NEDS, and NRD) and the State Databases (SID, SASD, and SEDD) for those States that have agreed to participate.

MONAHRO

MONAHRQ is a software product that enables organizations - such as state and local data organizations, Chartered Value Exchanges, hospital systems, and health plans - to input their own hospital administrative data and generate a data-driven

AHRQ Quality Indicators (QIs)

AHRQ Quality Indicators (QIs) use hospital administrative data to highlight potential quality concerns, identify areas that further study and investigation, and track changes over time.

HCUP Tools & Software

The HCUP Tools and Software are analytic methods that, when applied to HCUP databases, systematically create new data elements from existing data, thereby enhancing a researcher's ability to conduct analyses. While designed to be used with I databases, they may be applied to other administrative databases as well.

Tools for ICD-9-CM

ICD-9-CM codes were frozen in preparation for ICD-10 implementation and regular maintenance of the codes has been suspended. The HCUP Tools for ICD-9-CM should only be used with data for discharges before 10/1/2015.

Clinical Classifications Software (CCS) for ICD-9-CM Clinical Classifications Software (CCS) provides a method for classifying ICD-9-CM diagnoses or procedures into clinically meaningful categories, which can be used for aggregate statistical reporting of a variety of types. (Updated for codes valid

(Codes valid through FY 2015.)

Chronic Condition Indicator The Chronic Condition Indicator (CCI) provides users an easy way to categorize ICD-9-CM diagnosis codes into one of two categories; chronic or not chronic. The tool can also assign ICD-9-CM diagnosis codes into 1 of 18 body system categories.

through FY 2015.)

Comorbidity Software Comorbidity Software assigns variables that identify coexisting conditions on hospital discharge records, (Codes valid through FY 2015.)

Procedure Classes facilitate research on hospital services using administrative data by identifying whether a procedure is (a) diagnostic or therapeutic, and (b) minor or major in terms of invasiveness and/or resource use. (Updated for codes valid through FY 2015.)

CPT Based Tools

Surgery Flags

Surgery Flags identify surgical procedures and encounters in ICD-9-CM or CPT-based inpatient and ambulatory surgery data. Two types of surgical categories are identified: NARROW surgery is based on a narrow, targeted, and restrictive definition and includes invasive surgical procedures. BROAD surgery includes procedures that fall under the NARROW category but adds less invasive therapeutic and diagnostic procedures that may are often performed in surgical settings. Users must agree to a license to use the Surgery Flags before accessing the software. (Updated for codes valid through 2015.)

Clinical Classifications Software for Services and Procedures CCS-Services and Procedures provides a method for classifying Current Procedural Terminology (CPT) codes and Healthcare Common Procedure Coding System (HCPCS) codes into clinically meaningful procedure categories. The procedure categories

Tools for ICD-10-CM/PCS

HCUP tools have be translated to ICD-10-CM/PCS in anticipation of conversion to the new coding system on October 1, We welcome comments. If you have questions or suggestions for changes, please contact hcup@ahrq.gov.



Clinical Classifications Software (CCS) for ICD-10-CM/PCS provides a method for classifying ICD-10-CM diagnoses or ICI PCS procedures into clinically meaningful categories, which can be used for aggregate statistical reporting of a variety of types. (Updated for codes valid through FY 2016.)

Chronic Condition Indicator for ICD-10-CM

Chronic Condition Indicator for ICD-10-CM provides users an easy way to categorize ICD-10-CM diagnosis codes into on two categories: chronic or not chronic. The tool can also assign ICD-10-CM diagnosis codes into 1 of 18 body system categories, (Updated for codes valid through FY 2016,)

Comorbidity Software for ICD-10-CM

Comorbidity Software for ICD-10-CM assigns variables that identify coexisting conditions on hospital discharge records. (Updated for codes valid through FY 2016.)

Procedure Classes for ICD-10-PCS

Procedure Classes for ICD-10-PCS facilitate research on hospital services using administrative data by identifying wheth ICD-10-PCS procedure is (a) diagnostic or therapeutic, and (b) minor or major in terms of invasiveness and/or resource (Updated for codes valid through FY 2016.)

Other Tools

Clinical Classifications Software (CCS) for Mortality Reporting

Clinical Classifications Software (CCS) for mortality reporting provides a method for classifying ICD-10 mortality diagnost clinically meaningful categories, which can be used for aggregate statistical reporting of a variety of types. Note that this original ICD-10 system for mortality reporting; not ICD-10-CM/PCS coding which will be implemented on October 1, 201

Codes are valid through 2009.

Utilization Flags



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- Free, interactive online query system
- Users generate tables of outcomes by diagnoses and procedures
- Data can be cross-classified by patient and hospital characteristics

http://hcupnet.ahrq.gov/



HCUPnet Can Answer a Variety of Questions



- What percentage of hospitalizations for children are uninsured, by State?
- What are the most expensive conditions treated in U.S. hospitals?
- What is the trend in admissions for depression?
- Will there be a sufficient number of cases to do my analysis?
- How do my estimates and calculations compare with HCUPnet (validation)?



AHRE HCUPnet Provides ...



- Step-by-step queries on:
 - Hospital inpatient (NIS, KID, SID)
 - ED visits (NEDS, SEDD)
 - Ambulatory surgeries
 - National and regional statistics
- Specialized queries:
 - Mental health related stays
 - Stays by expected payer
 - Hospital-level statistics
- Ready-to-use:
 - National benchmarks for healthcare quality indicators based on the AHRQ Quality Indicators
 - "Quick national or State statistics"
 - Readmissions
 - Community-level statistics



AHR How does HCUPnet Work?



- Step 1: Select the focus of your query.
- Step 2: Select the type of query want.
- Step 3: Select the Outcomes and Measures.
- Step 4: Select patient and hospital characteristics.
- Step 5: Results.



R Agency for Healthcare Research and Quality

Search AHRQ

Welcome to H·CUPnet

HCUPnet is a free, on-line query system based on data from the Healthcare Cost and Utilization Project (HCUP). It provides access to health statistics and information on hospital inpatient and emergency department utilization.



http://hcupnet.ahrq.gov

Begin your guery here -

Statistics on Hospital Stays

National Statistics on All Stays

Create your own statistics for national and regional estimates on hospital use for all patients from the HCUP National (Nationwide) Inpatient Sample (NIS). Overview of the National (Nationwide) Inpatient Sample (NIS) #

Mational Statistics on Mental Health Hospitalizations

Interested in acute care hospital stays for mental health and substance abuse? Create your own national statistics from the NIS.

State Statistics on All Stavs

Create your own statistics on stays in hospitals for participating States from the HCUP State Inpatient Databases (SID). Overview of the State Inpatient Databases (SID) ₩

(National Statistics on Children

Create your own statistics for national estimates on use of hospitals by children (age 0-17 years) from the HCUP Kids' Inpatient Database (KID). Overview of the Kids' Inpatient Database (KID) @

(National and State Statistics on Hospital Stays by Payer - Medicare, Medicaid, Private, Uninsured

Interested in hospital stays billed to a specific payer? Create your own statistics for a payer, alone or compared to other pavers from the NIS, KID, and SID.

Ouick National or State Statistics

Readv-to-use tables on commonly requested information from the HCUP National (Nationwide) Inpatient Sample (NIS), the HCUP Kids' Inpatient Database (KID), or the HCUP State Inpatient Databases (SID).

Hospital Readmissions

Readmission Summary Tables

Ready-to-use information on readmissions to the hospital within 30 days of discharge.

Statistics on Ambulatory Surgery Use

(Statistics on Ambulatory Surgery

Create your own statistics on ambulatory surgeries for participating States from the HCUP State Ambulatory Surgery and Services Databases (SASD). Compare to statistics on inpatient surgeries for participating States from the HCUP State Inpatient Databases (SID).

Ouick Statistics on Readmissions

Sortable tables that provide instant information on 30-day readmissions to the hospital.

(Quick Statistics on Ambulatory Surgery

Overview of the State Ambulatory Surgery and Services Databases (SASD) @ Overview of the State

Ready-to-use tables on commonly requested information from the SASD.

Statistics on Emergency Department Use

Overview of the State Inpatient Databases (SID) &

(National Statistics on All ED Visits

Inpatient Databases (SID) ₽

Create your own statistics for national and regional estimates on emergency department visits for all patients from the HCUP Nationwide Emergency Department Sample (NEDS). Overview of the Nationwide Emergency Department Sample (NEDS) &

State Statistics on All ED Visits

Create your own statistics on emergency department visits for participating States from the HCUP State Emergency Department Databases (SEDD) and the SID. Overview of the State Emergency Department Databases (SEDD) &

Ouick National or State Statistics on All ED Visits

Ready-to-use tables on commonly requested information from the NEDS, SEDD, and SID.

First Time Visitor? HCUPnet overview

> How does HCUPnet work? HCUPnet methodology?

HCUPnet definitions?

What's New?

 2013 nationwide Just Add ED data -- new database ius

released. (12/11/2015) Cost information Just Ad for participating states in 20

(10/13/2015) 2013 nationwide Just hospital data now available

(10/08/2015) New 2013 readmission data added, (09/30/2015)

 Maps are now available on t Community-Level Statistics

path. (06/08/2015) 2013 data for participating

States. (04/09/2015) All NIS results prior to 2012 recalculated to

Projected estimates # on speci

conditions are periodically available here.

permit trend analysis



More information HCUP data, too and reports if

What is HCUP?

Brief description - what is HCUI Want to purchase data to do vo

own analysis? The statistics in HCUPnet would not be possible without partner organizations 🗗 that provide da

HCUPnet is based on aggregate statistics to speed up data transfer and protect indirecords, so not all possible queries can be addressed. If a query is not possible, HCU

vill not allow you to choose certain param If there is a query you'd like to see that HCUPnet does not support, please write us cup@ahro.hhs.gov. Internet Citation:

HCUPnet, Healthcare Cost and Utilization Project. Agency for Healthcare Research a Quality, Rockville, MD.

http://hcupnet.ahrq.gov/



AHR HCUPnet Capabilities



HCUPnet	
CAN PRODUCE	CANNOT PRODUCE
Simple statistics	More complicated queries
Sample size calculations	Multivariate analyses
Trends information	Statistics involving certain variables
Rank ordering of diagnoses and procedures	Statistics that may violate confidentiality (patient-, provider-, hospital-level data)
Significance testing	



AHRO Webinar Overview



- Brief Database Review
- Tools & Software
- Supplemental Files
- HCUPnet Overview
- HCUP Fast Stats
- Publications and Publication Search
- How to Access HCUP Resources



AHRA HCUP Fast Stats





HCUP Fast Stats

Effect of Medicaid Expansion on Hospital Use

. State-Level Trends in Inpatient Stays for Medicaid and Uninsured Patients

National Hospital Utilization and Costs

- Trends in Inpatient Stays
- . Most Common Diagnoses for Inpatient Stays
- Most Common Operations During Inpatient Stays

Information About HCUP Fast Stats

Fast Stats Frequently Asked Questions

. HCUP Fast Stats FAQ

Uses of Fast Stats

- Medicaid Expansion Reduces Uninsured Hospital Stays
 - · Health Affairs, January 2016
 - Kaiser Family Foundation Issue Brief, September 2015
- HCUP Fast Stats provides easy access to the latest HCUP-based statistics for health information topics.
- Uses visual statistical displays in stand-alone graphs, trend figures, or simple tables to convey complex information at a glance.
- Information will be updated regularly (quarterly or annually, as newer data become available).

http://www.hcup-us.ahrq.gov/faststats/landing.jsp



HCUP Fast Stats –

AHRR Effect of Medicaid Expansion on Hospital Use





HCUP Fast Stats - Effect of Medicaid Expansion on Hospital Use

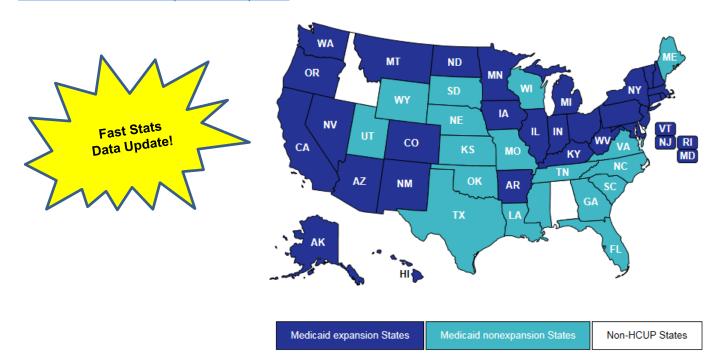
HCUP Fast Stats provides easy access to the latest HCUP-based statistics for health information topics. Information on the effect of Medicaid expansion on hospital use will be updated regularly (quarterly or annually, as newer data become available).

Tools & Fast News & Purchase Technical Data
Home Databases Software Reports Stats Events HCUP Data Assistance Innovations

Effect of Medicaid Expansion on Hospital Use

Click map to select one of the identified States, or select from list and click Select: Alaska* Select *Medicaid expansion State Information is not available for all States.

A tutorial for Effect of Medicaid Expansion on Hospital Use is available.



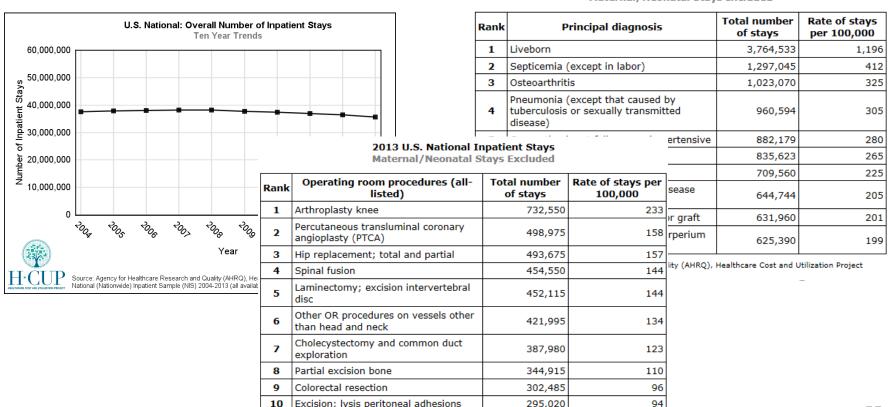


HCUP Fast Stats – National Hospital Utilization and Costs



 Includes information on trends in inpatient stays, the most common diagnoses for inpatient stays, and the most common operations during inpatient stays.

2013 U.S. National Inpatient Stays Maternal/Neonatal Stays Included





AHRO Webinar Overview



- Brief Database Review
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- HCUPnet Overview
- HCUP Fast Stats
- Publications and Publication Search
- How to Access HCUP Resources



AHRE HCUP Publications



Statistical Briefs

Methods Series Reports



AHRO Agency for Health Research and Qua

STATISTICAL BRIEF #201

February 2016

Trends in Bilateral and Unilateral Mastectomies in Hospital Inpatient and Ambulatory Settings, 2005-2013

Claudia A. Steiner, M.D., M.P.H., Audrey J. Weiss, Ph.D., Marguerite L. Barrett, M.S., Kathryn R. Fingar, Ph.D., M.P.H., and P. Hannah Davis, M.S.

Mastectomy (surgical removal of the breast) is a common procedure used in the treatment of breast cancer. Although 97-99 percent of breast cancers occur in only one breast, 1 some women choose also to remove the healthy breast—a contralateral prophylactic mastectomy (CPM). Reasons that women elect to undergo CPM include physician advice, fear of a subsequent breast cancer diagnosis, desire for cosmetic symmetry, family breast cancer diagnosis, desire for coshreic symmetry, ramly history of breast cancer, and genetic susceptibility to breast cancer due to mutations in the BRCA1 and BRCA2 genes. Some women, such as those with a genetic predisposition to prophytactic bilateral cancer in either breast

ncer in either breast g surgery, such as to 2011.4 Much of this increase nt for early-stage breast ving CPM increased more than om 1.9 to 11.2 percent).⁶ I, from 2002 through 2012, the nained stable at around 130

cancer: a population-based study of what. Surgery: 2003;133:383–9. n BK, Bedrosian I, Babiera GV, et al. attents with unilateral breast cancer stomy. Cencer. 2009 Mar 1;115(5):982–

Nelson DO, Clarke CA, Gomez SL. , Nesson DO, Clarike CA, Gornez SL, y compared with other surgical 18–2011. JAMA. 2014; 312(9):902–14. looks MA. Nationwide trends in MA Surg. 2015 Jer; 150(1):9–18.

 Between 2005 and 2013, the Between 2005 and 2013, the overail rate of mastectomy increased 36 percent, from 66 to 90 per 100,000 adult women. The rate of hospital-based bilateral mastectomies (inpatient and outpatient combined) more than tripled, from 9.1 to 29.7 per 100,000 adult weepen, whereast 100,000 adult women, whereas the rate of unliateral mastectomies remained relatively stable at around 60 per 100,000 women.

- Women who had a bilateral mastectomy in 2013 were about 10 years younger than those who had a unliateral mastectomy.
- From 2005 to 2013, the rate of bilateral outpatient mastectomies increased more than fivefold and the inpatient rate nearly tripled. The rate of unliateral mastectomies nearly doubled in the outpatient setting but decreased 28 percent in the inpatient setting. By 2013, nearly half of all mastectomies were performed outpatient.
- Regardless of hospital setting. between 2005 and 2013, bilateral mastectomies with cancer more than tripled and bilateral mastectomies without cancer more than doubled. The rate of unilateral mastectomies without cancer also increased (by 38 percent), but the rate of unliateral mastectomies with cancer remained stable.
- The proportion of hospital-based breast cancer and toward bilateral mastectomies, with and without breast cancer. By 2013, more than one in four hospitalbased mastectomies were



HCUP Methods Series

Project (HCUP) State Databases

Report # 2015-05

Identifying Observation Services in the Healthcare Cost and Utilization



AHR Statistical Brief Topics







STATISTICAL BRIEF #202

March 2016

Mental and Substance Use Disorders Among Hospitalized Teenagers, 2012

Kevin C. Heslin, Ph.D., and Anne Elixhauser, Ph.D.

Introduction

Young people are at increased risk for mental and substance use disorders (M/SUDs) because of a number of factors, Including rapid physical and emotional changes, family history home environment, and peer influences. 12 In the United States, one in five young people between the ages of 13 and 18 years (21.4 percent) are currently experiencing or have had a seriously debilitating mental disorder at some point in the past.3 During 2012, 9.1 percent of young people between the ages of 12 and 17 years (about 2.2 million) experienced a major depressive episode—and among these, an estimated 34.0 percent (753,000) also used Illot drugs.4 Further, epidemiologic surveys of adults suggest that substance use among young people frequently continues and worsens into adulthood. For example, the prevalence of alcohol use disorders is consistently higher among adults who initiated use by age 14 years than among those who first used at age 18 years or older.5 Thus, effective prevention, treatment, and recovery support services targeting young people with M/SUDs represent a critical opportunity not only to improve functioning and well-being in the short term but also to affect the life course trajectories of emerging adults.

The delivery and financing of M/SUD care for young people have undergone tremendous changes in the past 30 years in

- 1 Hesselbrock VM, Hesselbrock MN. Developmental perspectives on the risk for developing substance abuse problems. In: WR Miller & KM Cerroll (Eds.), Rethinking Substance Abuse: What the Science Shows, and What We Should Do About It. New York: Guilford Press; 2010:97-114.

 Merikanges KR, Nakamura EF, Kessler RC. Epidemiology of mental disorders
- in children and adolescents. Dialogues in Clinical Neuroscience. 2009;11(1):7-
- National Institute of Mental Health. Statistics: Any Disorder Among Children. http://www.nimh.nih.gov/health/statistics/prevalence/anv-disorder-amongchildren shtml. Accessed Jenuary 25, 2018. Substance Abuse and Mental Health Services Administration, Center for
- Behavioral Health Statistics and Quality, 2013 National Survey on Drug Use and Health: Mental Health Detailed Tables. Rockville, MD: Substance Abuse and Mental Health Services Administration: 2014. etto://www.semise.gov/deta/sites/defeut/files/2013MHDetTebs/NSDUH-

MHDerTabs2013 odf. Accessed January 25, 2016.

Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Qual the 2013 National Survey on Drug Use and Health: Summary of National Findings, HHS Publication No. (SMA) MD: Substance Abuse and Mental Health Services Administration; 2014. http://www.samhea.gov/deta/shee/defaul/files/NSDUHosuds/PDPAHTMI.2015Web/NSDUHosuds/2013.pdf. A 2016.

Highlights

 In 2012, 310,100 community hospital stays among teenagers (ages 13 to 19 years) Included at least one mental or substance use disorder diagnosis more than one-for stays in this age g



percent).

- Mood disorders w common mental d stays), followed b disorders (85,800 attention and con (81,700 stays).
- The rate of stays and conduct disor percent lower for for 13-year-olds (stays per 100,000 year-olds: 261 sta population).
- Cannabis use disc most common sub disorder (54,100 s alcohol use disord stays) and opioid (14,500 stays).
- The rate of stays use disorders was times higher amor than among 13-ye olds: 137 stays pe population; 13-yea per 100,000 popul

Polednak AP. Bilateral synchronous breast cancer: a population-based study of Production for Distriction, milk and production and survival. Surgery, 2003;133:383–9.

7 Y M, Martic-Bernstein F, Middeton LP, Arun BK, Bedrostein I, Babless GV, et al.

Prediction of controllateral breast cancer in pa

7.1. Zudan AW, Lichtansztajn DY, Keegan THM, Nelson DO, Clarke CA, Gomez SL. Use of and montality after idiates in mestactory compared with other surgical treatments for treat cancer in Cellstonia, 1998–2011. JAMA. 2014;12(9):902–14. "Rummerow KI, Du L, Pireson DF, Styr. Hooks MA, Nationalde transis in mestactority for surgi-stage breast cancer. JAMA 2019, 2015 Jan;15(1):5–16.

National Cancer Institute, SEER Stat Fact Sheets: Breast Cancer



H-CUP HEALTHCARE COST AND



STATISTICAL BRIEF #201

February 2016

Trends in Bilateral and Unilateral Mastectomies in Hospital Inpatient and Ambulatory Settings, 2005–2013

Claudia A. Steiner, M.D., M.P.H., Audrey J. Weiss, Ph.D., Marguerite L. Barrett, M.S., Kathryn R. Fingar, Ph.D., M.P.H., and P. Hannah

Introduction

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Research indicates that the proportion of women choosing mastectomy over breast-conserving surgery, such as lumpectomy, increased from 1998 to 2011.4 Much of this increase is attributed to an increase in bilateral mastectomy involving earlystage cancer in one breast and CPM of the other breast.5 Indeed. among women undergoing treatment for early-stage breast cancer, the percentage of those having CPM increased more than fivefold between 1998 and 2011 (from 1.9 to 11.2 percent). During this approximate time period, from 2002 through 2012, the incidence of breast cancer overall remained stable at around 130 per 100 000 women?

Highlights

- Between 2005 and 2013, the overall rate of mastectomy Increased 36 percent, from 66 to 90 per 100,000 adult women. The rate of hospital-based bilateral mastectomies (inpatient and outpatient combined) more than tripled, from 9.1 to 29.7 per 100,000 adult women, whereas the rate of unitateral mastectomies remained relatively stable at around 60 per 100,000 women.
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- The proportion of hospital-based mastectomies shifted away from unilateral mastectomies with breast cancer and toward bilateral mastectomies, with and without breast cancer. By 2013, more than one in four hospitalbilateral with cancer.





STATISTICAL BRIEF #200

January 2016

Procedures to Treat Benign Uterine Fibroids in Hospital Inpatient and Hospitalmbulatory Surgery Settings, 2013

> L. Barrett, M.S., Audrey J. Welss, Ph.D., Carol Stocks, Claudia A. Steiner, M.D., M.P.H., and Evan R. Myers,

of 50, as many as 70-80 percent of women will fine fibroids (leiomyomas)—typically benign tumors of For many women, uterine fibroids pose no health imen are asymptomatic. For others, uterine fibroids symptoms such as heavy bleeding, pain, and frequent id they are associated with an increased risk of omplications 3. Some women are more likely than velop uterine fibroids. For instance, uterine fibroids mmon in Black than in White women 4 and Black to have more severe symptoms.5 Research also it. compared with White women. Black women fine fibroids at a younger age and have more severe , larger size, number, and growth rate).0,7,0

with symptomatic fibroids, a variety of treatment available.9 Women with mild symptoms may choose tments such as pain relievers and hormonal drugs. noderate to severe symptoms may need surgery to fibroids. Common surgical treatment options include y (removing the uterus), myomectomy (removing the rine fibroid embolization (blocking the blood supply to

reon DB, Hill MC, Cousine D, Schectman JM. High cumulative rine leiomyoma in black and white women: ultrasound eviden ral of Obstatrics and Gynecology, 2003;188(1):100-7. nen's Health. Uterine Fibroids Fact Sheet. January 15, 2015.

i, Eltoukhi HM, Al-Hendy A. Racial and ethnic differences in the nd dinical manifestations of uterine leiomyome. Seminers in fedicine, 2013;31(5):370-9. Scholson WK, Bradley L, Borsh BJ. The burden of uterine fibroids for an women: results of a national survey. J Womens Health

Stewart EA. Uterine leiomyomes: individualizing the approach to a condition. Obstet Gynecol. 2011;117(2 Pt 1);396-403. Leppert P, Myers ER, Wang F. Comparison of characteristics of an American and white women undergoing pre-menopeusal Fertil Sterility, 2013;99(3);768-76. nen's Health, January 15, 2015. Op. cit.

Highlights

- In 2013, four surgical procedures for benign uterine fibroids were about as common in the hospital-based ambulatory surgery (AS) setting as in the inpatient setting (47.8 vs. 52.2 percent). Compared with inpatient stays, AS visits had a shorter average length of stay (0.6 vs. 2.3 days) and lower average hospital charges (\$25,200 vs. \$28,000).
- overall rate of hysterectomy decreased by 20 percent, from 210.8 to 168.0 per 100,000 women aged 18-54 years. This change was driven by a 52 percent decrease in the rate of inpatient hysterectomy. The rate of AS hysterectomy Increased by over 400 percent during this time period.
- The rate of inpatient myomectomy decreased by 29 percent, and the rate of AS myomectomy remained relatively constant. The rate of both inpatient and AS uterine fibroid embolization increased by approximately 170 percent. The rate of endometrial ablation decreased in both the inpatient and AS settings (40 and 19 percent decrease, respectively).
- To treat benign uterine fibroids, Black and Hispanic women more commonly had inpatient surgery whereas White women more commonly had AS.
- Private insurance was the predominant expected payer for both inpatient stays and AS visits involving procedures to treat benign uterine fibroids. Medicald paid for more inpatient stays than AS visits.



AHR HCUP Methods Reports



Methodological information on the HCUP databases and software tools



HCUP Methods Series

The HCUP Methods Series features a broad array of methodological information on the HCUP databases and software tools. Reports in the series are listed below by category. Reports are also listed by year in chronological order.

Methodology

- Calculating Costs
- Diagnosis Present-on-Admission Indicators
- Estimating Trends (NIS and KID)
- Expected Paver
- Observation Services
- Population Denominator Data for Use with HCUP
- Readmission and Revisit Analyses
- · Statistical Methods

HCUP Methods for NHQR and NHDR

- NHQR

Calculating Costs

Report #2011-Tools for More Accurate Inpatient Cost Estimates with HCUP Databases, 2009 (PDF file, 837 KB) Report #2008-Calculate Cost Adjustment Factors by APR-DRG and CCS Using Selected States with Detailed Charge (PDF file, 122 KB) Report #2008-The Cost of Ambulatory Surgery Visits, 2005 (PDF file, 187 KB) Report #2007-The Cost of "Treat and Release" to Hospital Emergency Departments, 2003 (PDF file, 166 KB)

Comparison Reports

- NIS
- KID

Evaluations of Data

- · Emergency Department Data
- · State Ambulatory Surgery and Services Databases
- · Other (Patient Safety Variation, E Codes, Observation Stays)

Enhancing Administrative Data

- · Clinical Information
- · Synthetic Person Numbers (for linking across settings and over time)

HCUP Tool Development

- · Clinical Classifications Software
- · Comorbidity Software
- Utilization Flags

Return to top



Reports

HCUP reports include new findings, publications, research notes based on HCUP data, and technical reports about HCUP issues. These products are developed by AHRQ through a Federal-State-Industry partnership.

Databases

Tools & Software Reports

Fast Stats News & Purchase Events HCUP Data

A

Technical Assistance Data Innovations

Favorites

CUP Statistical Briefs

UP Methods Series

pical Reports

disparities

use disorders

pulations.

atistical Briefs are simple, descriptive reports on a riety of specific health-care related issues. A full list is ailable by topic and chronological order. The most recent efs are:

Home

- Mental and Substance Use Disorders Among Hospitalized Teenagers, 2012
- Trends in Bilateral and Unilateral Mastectomies in Hospital Inpatient and Ambulatory Settings, 2005-2013

HCUP Infographics

Infographics provide a visual representation of Statistical Brief data. A <u>full list</u> is available. The most recent infographic is:

 Neonatal and Maternal Hospital Stays Related to Substance Use, 2006-2012 (PDF file, 257 KB)

HCUP Projections

Projection reports use longitudinal HCUP data to project national and regional estimates on health care priorities. A full list is available. The most recent reports are:

- Acute Myocardial Infarction (AMI) and Acute Stroke 2004 to 2015 (PDF file, 3.2 MB)
- <u>Clostridium Difficile Hospitalizations 2003-2015</u> (PDF file, 1.9 MB)

Information About Using HCUP Data

HCUP Nationwide Database Reports

These reports are specific to the design and content of the HCUP nationwide databases.

- National (Nationwide) Inpatient Sample (NIS)
- Kids' Inpatient Database (KID)
- Nationwide Emergency Department Sample (NEDS)

HCUP State Database Reports

These reports are specific to the design and content of the HCUP state databases.

- State Inpatient Databases (SID)
- State Ambulatory Surgery and Services Databases (SASD)
- State Emergency Department Databases (SEDD)

thods Series reports, organized by <u>topic</u> and ronological order, feature a broad array of ethodological information on the HCUP databases and ftware tools. The most recent reports are:

<u>Calculating National Inpatient Sample (NIS)</u>
 <u>Variances for Data Years 2012 and Later</u> (PDF file, 565 KB)

pical reports provide information about various priority

· Approaches to using race-ethnicity data for reducing

· Utilization and spending for mental and substance

<u>User Guide - An Examination of Expected Payer Coding in HCUP Databases</u> (PDF file, 542 KB)
 <u>Supplements 1-3</u> (PDF file, 880 KB)

Publications and Additional Topics HCUP Publications

These links provide access to lists of publications, resources, and descriptions of research activities that are based on HCUP data, software products, and tools.

- Search for HCUP publications
- <u>Research Spotlights</u> on recent peer-reviewed journal articles
- · Review comprehensive list of AHRQ publications

HCUP Archive

This archive features a broad array of information based of HCUP databases and other related reports.

- The Value of Hospital Discharge Data (PDF file, 664 KB) (Posted May 2005)
- HCUP Facts and Figures (2005-2009)
- HCUP Highlights (2001-2003)
- HCUP Fact Books (1997-2004)
- HCUP National Statistics Archive (1992-1996)

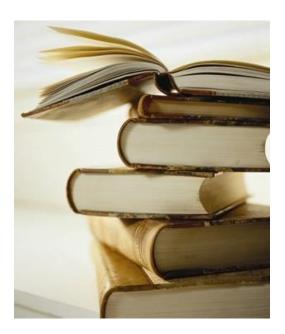


New: Publications Search Page on HCUP-US



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- State







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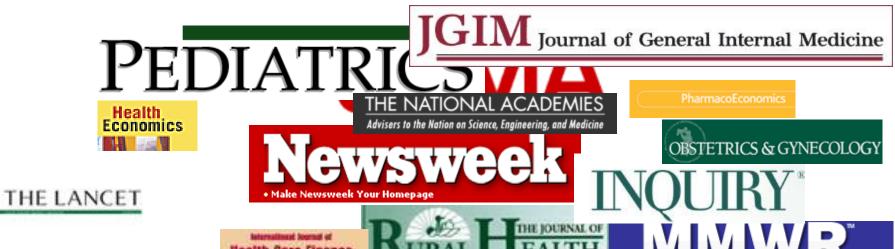


The NEW ENGLAND JOURNAL of MEDICINE















National Healthcare Disparities Report





Using HCUP Tools in Research



Research Spotlights

http://www.hcup-us.ahrq.gov/reports/spotlights.jsp



Bartlett, EK, Simmons, KD, Wachtel, H, Roses, RE, Fraker, DL, Kelz, RR, Jarakousis, GC. The rise in metastasectomy across cancer types over the past decade. *Cancer*. 2015 Marc 1;121(5):747-57.



AHRO Webinar Overview



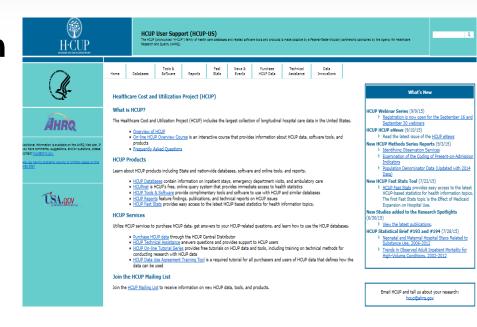
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AHR HCUP User Support Web Site

EH-CU

- Find detailed information on HCUP databases, tools, and products
- Access HCUPnet
- Find comprehensive list of HCUP-related publications, HCUP Statistical Briefs, and database reports
- Access technical assistance



http://www.hcup-us.ahrq.gov



AHRO HCUP Technical Assistance





Active Technical Assistance

- Responds to inquiries about HCUP data, products, and tools
- Collects user feedback and suggestions for improvement

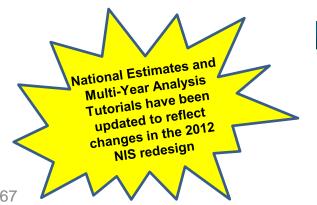
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- Load and Check HCUP Data
- Nationwide Readmissions Database (NRD)
- HCUP Sample Designs
- Produce National HCUP Estimates
- Calculate Standard Errors
- Multi-Year Analysis





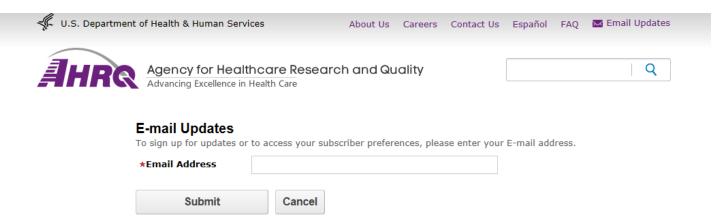




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Healthcare Cost and Utilization Project (HCUP)















AHR Questions/Comments?



Time for Questions and/or Comments.

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